

CELL TRANSPORT

Cell transport – Movement of molecules in and out of the cell

Match the definition on the left with the term on the right.

1. _____ Large wastes or cell products are **released** from inside to outside a cell
2. _____ Diffusion of *water molecules* through a selectively permeable membrane.
3. _____ The transport of particles which **requires the use of energy**
4. _____ A state reached when particles continue to move but in *equal amounts* in and out of the cell.
5. _____ Large particles are surrounded by the membrane and **taken into the cell**.
6. _____ Movement of any particles from an area of *higher* concentration to one of *lower* concentration, with the concentration gradient.
7. _____ The transport of particles which **does not require energy**

- a. **Passive transport**
- b. **Diffusion**
- c. **Dynamic equilibrium**
- d. **Exocytosis**
- e. **Osmosis**
- f. **Active transport**
- g. **Endocytosis**

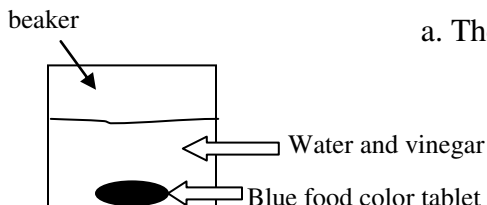
Circle the word or phrase that best completes the statement or answers the question.

8. The structure most responsible for maintaining cell homeostasis is the
cytoplasm **cell wall** **mitochondria** **plasma membrane**
9. The plasma membrane (cell membrane) is made up of a(n)
cholesterol layer **enzyme layer** **phospholipid bilayer** **protein layer**
10. Which of the following is NOT a form of passive transport?
facilitated diffusion **diffusion** **endocytosis** **osmosis**
11. Diffusion continues until
equilibrium is reached **turgor pressure is reached** **one side has more**
12. If a cell is placed in salt water, *water* leaves the cell by
osmosis **diffusion** **active transport** **phagocytosis**
13. A cell moves particles from a region of *low concentration to a region of high concentration* by
facilitated diffusion **osmosis** **passive transport** **active transport**

For each scenario, answer the questions and draw an ARROW to illustrate the movement of molecules.

14. Easter egg coloring:

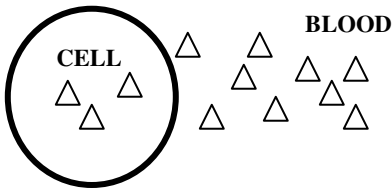
A blue food coloring tablet is placed in a cup of vinegar and water. After several seconds, the blue tablet will begin to dissolve and will eventually spread evenly throughout the liquid.



- a. The blue dye is traveling from a _____ to a _____ concentration.
- b. Identify the type of transport illustrated in this scenario:
- c. Does this movement of particles require energy?

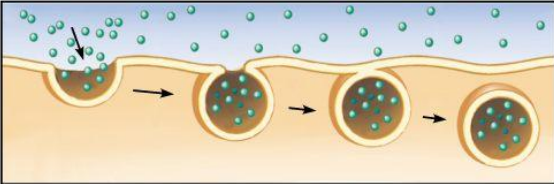
15. Following the digestion of food:

△ = glucose molecule



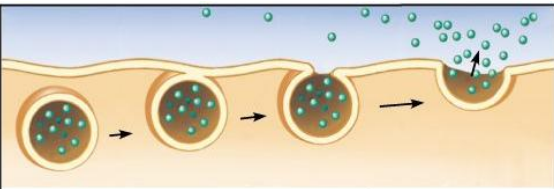
- Where is the higher concentration of glucose – blood or cell? _____
- Glucose travels through helper proteins in the cell membrane. Identify this specific type of cell transport: _____
- Is this active or passive transport? _____
- Use an arrow to illustrate the movement of glucose molecules.

16. Movement of large particles into the cell:



- Identify the specific type of transport being illustrated: _____
- How are the molecules being moved? _____ concentration → _____ concentration
- Does this require energy? _____

17. Movement of large particles out of the cell:



- Identify the specific type of transport being illustrated: _____
- Is this active or passive transport? _____
- What type of substances would be moved in this way? _____

18. For the boxes seen below, do the calculations (each environment must equal 100%), draw an ARROW to illustrate the direction of water movement. State whether the solution is hypertonic, hypotonic, or isotonic.

25% H₂O
75% glucose

55% H₂O
45% glucose

___% H₂O
60% salt

30% H₂O
___% salt

___% H₂O
80% oxygen

80% H₂O
___% oxygen

___% H₂O
100% Solute

95% H₂O
___% Solute

OSMOSIS

*Water leaves cell.
Cell shrinks.
Hypertonic solution*

55% H₂O
___% carbon dioxide

50% H₂O
___% carbon dioxide

100% H₂O
___% Solute

95% H₂O
3% Other
___% Solute

___% H₂O
88% Solute

___% H₂O
10% Other
30% Solute

89% H₂O
___% Salt

80% H₂O
9% Other
___% Salt